

COMPETENCY MODEL FOR WASTEWATER TREATMENT OPERATOR (4123)

The following competencies have been identified as those that best separate superior from satisfactory job performance in the class of **WASTEWATER TREATMENT OPERATOR**. (Numbers refers to the order of the competencies in the Competency Bank.)

- 8. Safety Focus
- 12. Conscientiousness
- 20. Job Knowledge
- 24. Mechanical Aptitude
- 35. Teamwork
- 43. Follow Oral Direction
- 44. Follow Written Directions
- 45. Oral Communication
- 47. Written Communication

On the following pages are descriptions of each competency, including a definition, the level of the competency required for the class (*italicized*, **bolded**, and underlined), examples of behavioral indicators, and satisfactory and superior performance levels.

8. SAFETY FOCUS – Performs work in a way that minimizes risk of injury to self or others.

Level of Competency Required by Job:

- Level 1: Maintain awareness of unsafe conditions and actions to avoid injury.
- Level 2: Follow safety rules/procedures; avoid known hazards in the work environment.
- Level 3: **Carefully follow safety rules and procedures and consistently use all necessary safety equipment.**

Examples of Behavioral Indicators:

- Wears seat belt.
- Ensures safe physical work environment by taking actions such as eliminating unstable stacks of materials, closing drawers so filing cabinets will not tip over, and keeping pathways clear of tripping hazards.
- Reviews safety procedures before beginning each job with known hazards.
- Follows safety procedures while performing work even when it takes more time.
- Uses safety equipment such as goggles, gloves, and earplugs as required or warranted.
- Frequently checks safety equipment for proper condition and operation.

Performance Levels:

Satisfactory

Maintains awareness of personal safety to avoid injury or property damage during all work activities.

Superior

“Safety first.” Places avoidance of injury or property damage above all other job requirements. Mentions the need to follow safe work practices to co-workers. Actively seeks ways to avoid injury.

Safety Focus Areas

1. Knowledge of Cal/OSHA regulations and safety principles and practices related to personal protective equipment (PPE) and other safety equipment, such as SCBA (self-contained breathing apparatus), gas detectors, and lock-out block-out, sufficient to safely perform all applicable duties and meet all applicable regulations for PPE.
2. Knowledge of Cal/OSHA regulations related to proper handling, storage, and labeling of chemicals, including how to handle chemical spillage, sufficient to ensure a safe working environment.
3. Knowledge of Cal/OSHA procedures for confined space entry, including identifying confined spaces, evaluating hazards, air monitoring, emergency rescue equipment, and emergency rescue services, sufficient to ensure safety of self and others.
4. Knowledge of the safe operation and maintenance of tools and equipment in order to ensure that proper safety procedures are followed and ensure a safe working environment for oneself and others.
5. Knowledge of emergency procedures for situations, such as gas leaks, chemical spills, fires, and earthquakes, sufficient to help ensure the safety of self and others in cases of emergency situations.
6. Knowledge of first aid procedures, including treatment of injuries, such as cuts, scrapes, and burns, sufficient to treat injuries that do not require immediate medical attention.

12. CONSCIENTIOUSNESS – Dependable, reliable, diligent, and attends to all aspects of assignments (the “details”).

Level of Competency Required by Job:

- Level 1: Remain on-task and make every reasonable effort to complete work in time allotted. Note discrepancies and takes action or informs appropriate person when “things don’t seem right” in information or data.
- Level 2: **Note when own work logically relates to the work of others and coordinate with them and when additional tasks must be performed to complete an assignment and perform/assign them. Recognize when, despite best efforts, work will not be done and notifies supervision.**
- Level 3: Attend to each area of responsibility, and if all are not being addressed, arrange for transfer or elimination of some of them. Ensure that all aspects of programs/projects are properly addressed to ensure success.

Examples of Behavioral Indicators:

- Seeks all necessary information to do the job well.
- Learns from experience so can recognize when things are not right.
- Maintains a high level of task-related behavior.
- Continues to work diligently in the absence of supervision.
- Fully attends to seemingly minor as well as major aspects of each work assignment.

Performance Levels:

Satisfactory

Fully attends to work at hand; notes details, errors, and discrepancies and follows-up as necessary. Reliably performs and completes work. Punctual; respectful of others’ time.

Superior

Notes relationship of own work to work of others to ensure all aspects are coordinated. Performs additional tasks and otherwise follows-up to ensure thoroughness.

20. JOB KNOWLEDGE – Knows information required to perform a specific job. Includes both widely available courses of study (for example, chemistry, human resources management, graphic arts) and City-specific information (parking regulation and ticketing practices; purchasing procedures; provisions of the City Charter).

Level of Competency Required by Job:

- Level 1: Knowledge is concrete, factual, and/or procedural and may be defined by the organization. Situations in which it is applied are quite consistent.
- Level 2: **Knowledge is substantive and may be defined by an external trade, field, or profession. Situations in which it is applied vary and, as such, require breadth and depth of understanding.**
- Level 3: Knowledge is abstract, conceptual, and/or complex and may be supported by a well-defined academic discipline or authoritative sources (e.g., laws, ordinances, government guidelines/regulations/codes). Situations in which it is applied may vary greatly or be novel.

Examples of Behavioral Indicators:

- Performs work correctly/avoids technical (job content related) errors.
- Answers technical questions about work accurately.
- Asks few technical questions about the performance of routine work activities.
- Offers advice (“coaching”) to new employees regarding their work.
- Develops training programs for other employees.
- Sought out as a source of information by others.

Performance Levels:

Satisfactory

Sufficient job knowledge to perform work correctly independently. Answers technical questions about work correctly.

Superior

Expertise in technical job information sufficient to serve as a resource to others. May develop training manuals/ programs and/or give internal and/or external presentations related to work.

Job Knowledge Areas

1. Knowledge of preliminary wastewater treatment procedures, including chemical addition (ferric chloride and hydrogen peroxide), screening, and grit removal, sufficient to understand the processes involved and recognize problems when they occur.
2. Knowledge of primary wastewater treatment procedures, including chemical addition (organic and inorganic coagulants), sedimentation and clarification, sludge thickening and pumping, flow control, and system hydraulics, sufficient to understand processes involved and recognize problems when they occur.
3. Knowledge of secondary wastewater treatment procedures, including chemical addition (chlorine and polymer), activated sludge process, sedimentation and clarification, and sludge thickening, sufficient to understand processes involved and recognize problems when they occur.
4. Knowledge of tertiary wastewater treatment procedures, including filtration, chlorination, dechlorination, and coagulation, sufficient to understand processes involved and recognize problems when they occur.
5. Knowledge of effluent disposal procedures, including water reclamation, pumping, and water quality monitoring, sufficient to understand processes involved and recognize problems when they occur.
6. Knowledge of anaerobic sludge digestion procedures, including chemical addition (oxidants and buffering agents), heating, mixing, and gas production and use, sufficient to understand processes involved and recognize problems when they occur.
7. Knowledge of sludge dewatering procedures, including screening, belt press, centrifugation, chemical addition (polymer), conveyance, storage, and disposal, sufficient to understand processes involved and recognize problems when they occur.
8. Knowledge of odor control methods, including foul air scrubbing and chemical addition (oxidants and masking agents), sufficient to understand processes involved and recognize problems when they occur.
9. Knowledge of the wastewater treatment equipment, such as pumps, motors, drives, valves, barscreens, barminutors, disintegrators, compressors, blowers and fans, belt press, centrifuges, conveyors, wetcake storage tanks, gas burners, gates, clarifiers, aerators, aeration tanks, sedimentation tanks, chlorinators, filters,

dissolved air flotation thickener (DAF), aerobic digestors, anaerobic digestors, and fowl air scrubbers, sufficient to operate equipment safely and properly.

10. Knowledge of mechanical equipment preventative maintenance, including lubrication (e.g., oiling moving parts and greasing bearings), changing oil and oil filters, and exercising equipment, sufficient to ensure that equipment operates properly.
11. Knowledge of cleaning methods related to wastewater treatment, including keeping work area clean and keeping machinery free of debris, sufficient to ensure sanitary working conditions and keep machinery operating properly.
12. Knowledge of Lockout Blockout procedures, including isolating equipment, securing power, securing air, depressurizing equipment, closing necessary valves, and completing pertinent documentation, sufficient to ensure safety of plant personnel.

24. MECHANICAL APTITUDE – Accurately predicts the impact of forces on objects and assesses the behavior of other physical phenomena (e.g., volume, weight, velocity). Readily learns work involving the application of mechanical principles.

Level of Competency Required by Job:

- Level 1: Maintain a safe work environment by ensuring objects in it are stable, tools and equipment are properly used.
- Level 2: **Know the physical properties of objects in the work environment and correctly anticipate the action of forces upon them; performs work accordingly (correctly and safely).**
- Level 3: In-depth understanding of mechanical and physical phenomena sufficient to design and/or oversee the construction of systems.

Examples of Behavioral Indicators:

- Recognizes the impact of an earthquake on objects in the work environment and re-arranges them as possible to avoid possible damage or destruction and potential to cause injury.
- Uses tools properly to accomplish work correctly and safely.
- Recognizes the effects of various actions on objects and performs only those actions that will accomplish intended result and will not cause property damage or injury.
- Systems designed and/or for which construction is overseen operate as intended upon completion.

Performance Levels:

Satisfactory

Recognizes the operation of mechanical/physical phenomena sufficient to readily learn and perform work of a mechanical nature.

Superior

Displays exceptional insight into the operation of mechanical phenomena, and makes correct inferences regarding it. Promptly and accurately troubleshoots problems.

Mechanical Aptitude Areas

1. Knowledge of the relationship between flow, rotational speed (pump speed), valve position (%), pressure, temperature, and level, sufficient to ensure safety of self and others, and to prevent spills or equipment damage.

35. TEAMWORK – Interacts effectively with others to achieve mutual objectives; readily offers assistance to others to facilitate their goal accomplishment.

Level of Competency Required by Job:

- Level 1: Work effectively as a member of a work unit or project team. Readily offer assistance to others when they have too much work or have too little.
- Level 2: **Work effectively as a team member in which different people have different roles/responsibilities and perspectives. Identify points for collaboration with co-workers; readily offer and request assistance.**
- Level 3: Work effectively as a part of an interdependent team (your work gets done only if the work of the whole team is done; evaluation of team performance is more relevant than individual performance).

Examples of Behavioral Indicators:

- Discusses work-related matters with co-workers.
- Offers and requests assistance readily.
- Offers and is receptive to suggestions.
- Identifies problems with workflow that will prevent team from accomplishing its goals.
- Provides constructive criticism and feedback to team members to improve overall functioning of team.
- Assigns credit to team for accomplishments.

Performance Levels:

Satisfactory

Cooperates with co-workers and fulfills responsibilities as a member of a project team. Maintains a focus on common objectives and offers and requests assistance readily.

Superior

Sees the team as a whole; acknowledges that performance of the team is what in reality is evaluated by others. If anyone fails, everyone on the team fails.

43. FOLLOW ORAL DIRECTIONS – Performs work accurately as directed orally.

Level of Competency Required by Job:

- Level 1: Receive specific, complete oral directions daily or by individual task assignment throughout the day.
- Level 2: **Receive general instructions orally that span across days or for entire assignments.**
- Level 3: Receive general instructions/assignments orally regarding long-term objectives/responsibilities.

Examples of Behavioral Indicators:

- Does work assigned orally properly and on time.
- Asks pertinent questions for clarification of assignments.
- Performs work correctly when instructions were given orally.
- Explains assignments to others who received the same instructions.
- Performs work in accordance with general outline provided orally.
- Correctly infers details of assignments given only in general terms.

Performance Levels:

Satisfactory

Properly performs work when concrete, specific instructions are given orally. Asks pertinent questions when parts of the instructions are unclear or omitted.

Superior

Properly performs work assigned orally. Answers questions or explains work to others. Correctly infers details or portions of instructions that were omitted.

44. FOLLOW WRITTEN DIRECTIONS – Performs work accurately as directed in writing.

Level of Competency Required by Job:

- Level 1: Perform tasks assigned in writing.
- Level 2: Perform work after reading instructional manual.
- Level 3: **Perform work after completion of training modules or programs presented in writing.**

Examples of Behavioral Indicators:

- Correctly completes work assigned in writing.
- Answers questions and/or explains work to others who received the same instructions.
- Learns and applies information presented in writing (instruction manual; training program).
- Correctly infers details of work to be performed that were unclear or omitted as presented in writing.

Performance Levels:

Satisfactory

Correctly performs work assigned or for which training was provided in writing.

Superior

Understands instructions and training materials presented in writing to the extent that is able to answer questions or explain to others. Correctly infers unclear or omitted details as presented in writing through the use of precise language.

45. ORAL COMMUNICATION – Communicates orally in a clear, concise, and effective manner.

Level of Competency Required by Job:

- Level 1: Exchange specific, job-related information orally with others in the immediate work environment or via telephone and/or radio.
- Level 2: **Obtain/provide/present general and/or job-specific information orally to a variety of others in various situations.**
- Level 3: Obtain/provide/present a diverse array of information orally at varying levels of complexity to a wide range of others across many different situations and circumstances.

Examples of Behavioral Indicators:

- Audience clearly understands the intended message.
- Rarely must repeat information in response to questions.
- Refrains from use of unnecessary words, phrases, or jargon.
- Provides a level of detail appropriate to the situation (avoids too much or too little detail).
- Speaks at a level appropriate to the audience in terms of terminology, sentence structure, and simplicity/complexity of ideas expressed.
- Uses words with precision (vocabulary) to convey exact information.

Performance Levels:

Satisfactory

Speaks clearly and audibly, providing the appropriate information and level of detail. Typically conveys the message on the first attempt. Answers questions accurately and directly.

Superior

Speech is direct and to the point. Speaks convincingly and with authority when appropriate. Maintains sensitivity to the audience while providing thorough information with the appropriate level of detail through the use of precise language..

47. WRITTEN COMMUNICATION – Communicates effectively in writing.

Level of Competency Required by Job:

- Level 1: Write notes/e-mails. Completes forms with some open-ended responses (sentences).
- Level 2: **Write letters, articles/reports, and/or detailed descriptions of activities/occurrences.**
- Level 3: Write lengthy reports, instruction manuals, in-depth analyses/reviews of complex issues and/or articles for publication. Reviews the written work of others.

Examples of Behavioral Indicators:

- Writing includes the necessary information to convey the intended message.
- Sufficiently few errors in spelling, punctuation, grammar to not interfere with the intended message or distract the reader.
- Little editing or re-writing needed to produce a final product.
- Composes materials efficiently.
- Information is presented in a well organized manner.
- Tone and degree of formality are appropriate to the purpose and audience

Performance Levels:

Satisfactory

Writes material that clearly communicates the necessary information; needs little editing.

Superior

Precisely uses words and organizes information in a way that enhances presentation of the message. Virtually no editing needed.